



# The evolving landscape of beef from the dairy herd: A perspective from Ireland

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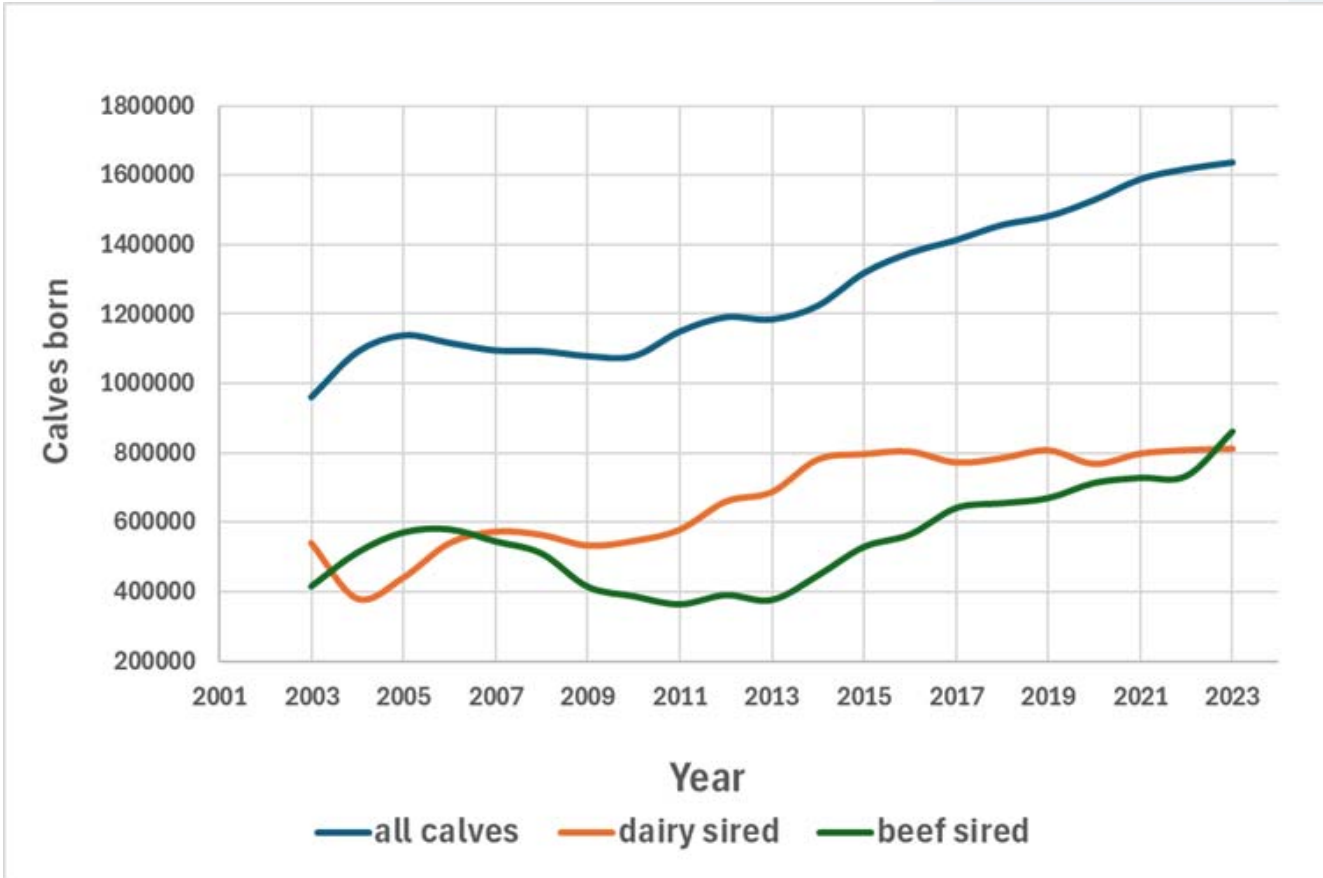


An Roinn Talmhaíochta,  
Bia agus Mara  
Department of Agriculture,  
Food and the Marine



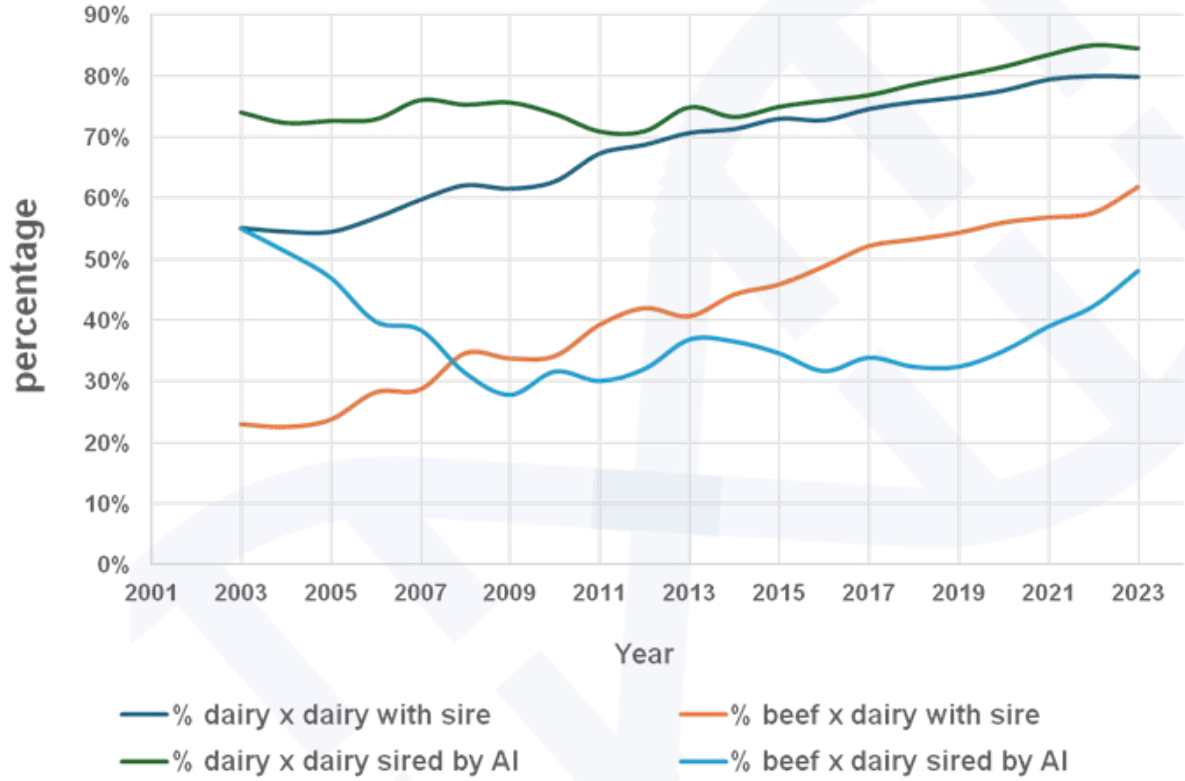
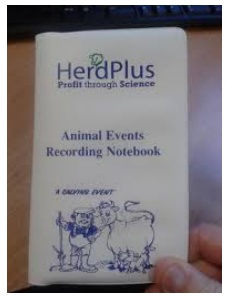
AgTech - it's in our DNA

# Dairy herd birth trends



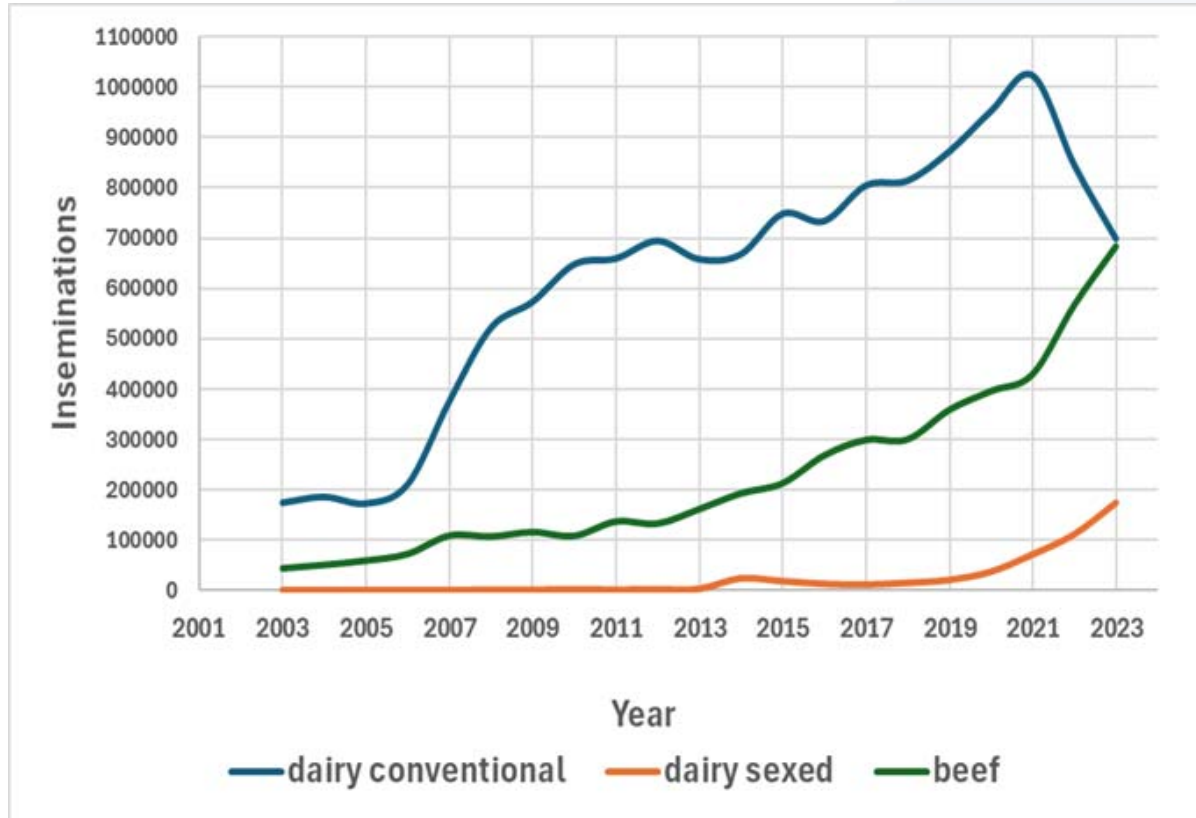
- 2023 Beef sired births now more than dairy sired
- 60% of beef carcasses now of dairy origin
- Herd size 69 to 101 cows

# Sire recording levels



- Farmers did not see huge benefit to recording beef sires up to now
- AI replacing some of the natural service sire market
- National genotyping program will increase sire recording levels

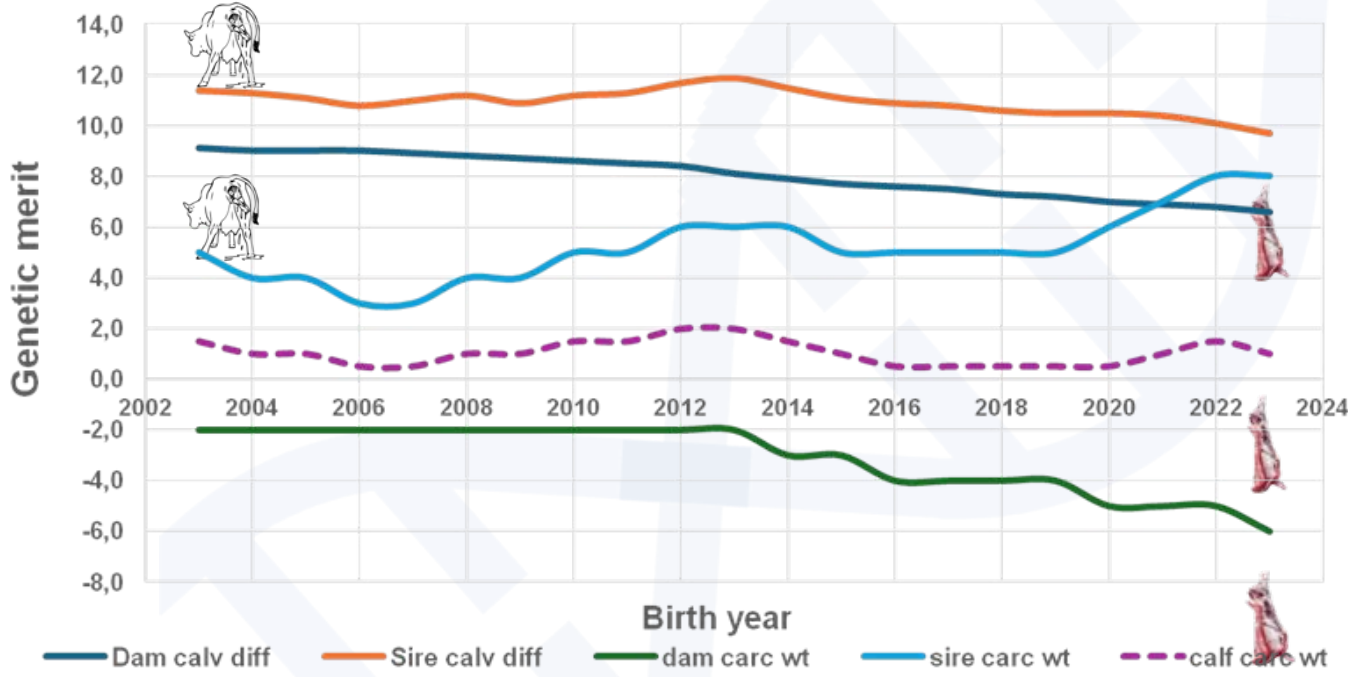
# Insemination trends



- Beef inseminations now close to dairy
- Sexed dairy semen on an upward curve

# The challenge!

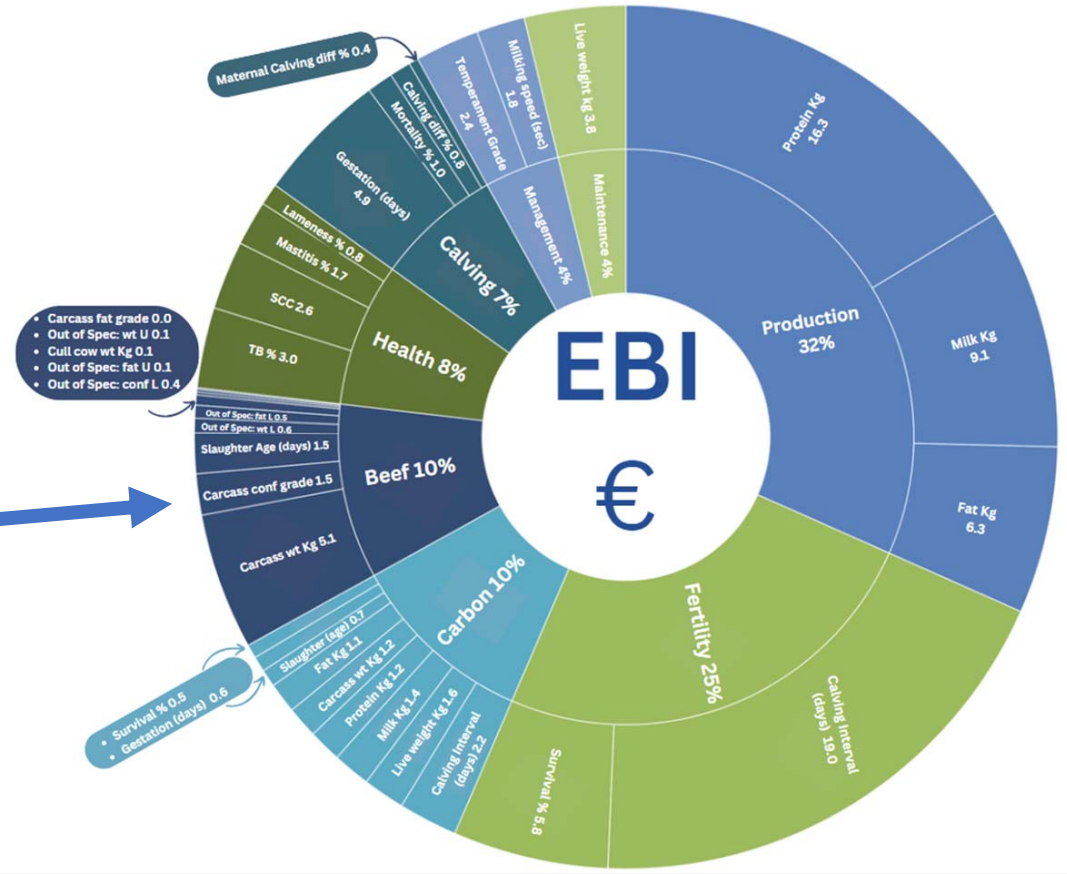
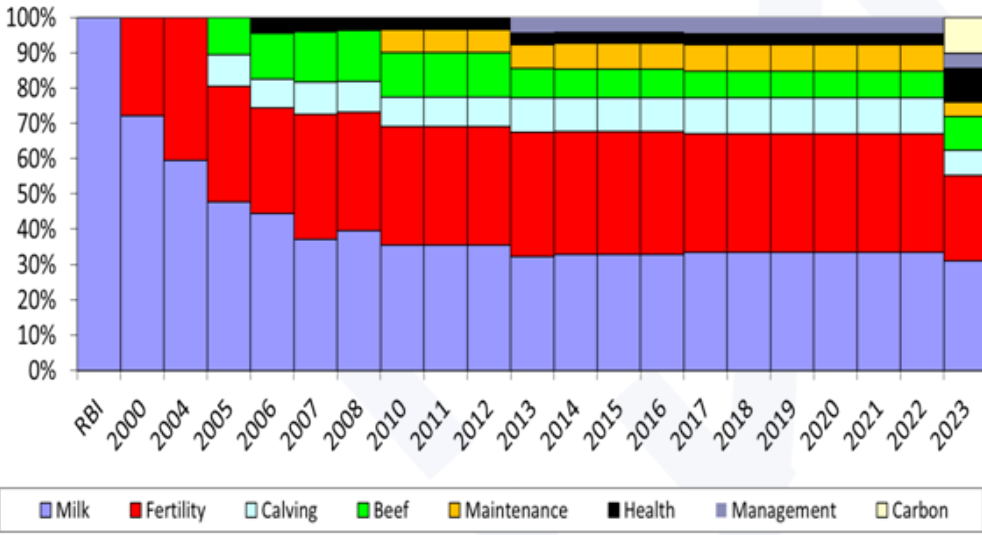
### Genetic merit of parents of Beef x Dairy Calves



- Farmers prioritised calving traits, Milk and fertility over beef merit of calves
- Net stagnant carcass merit from dairy cow progeny

# Even though!

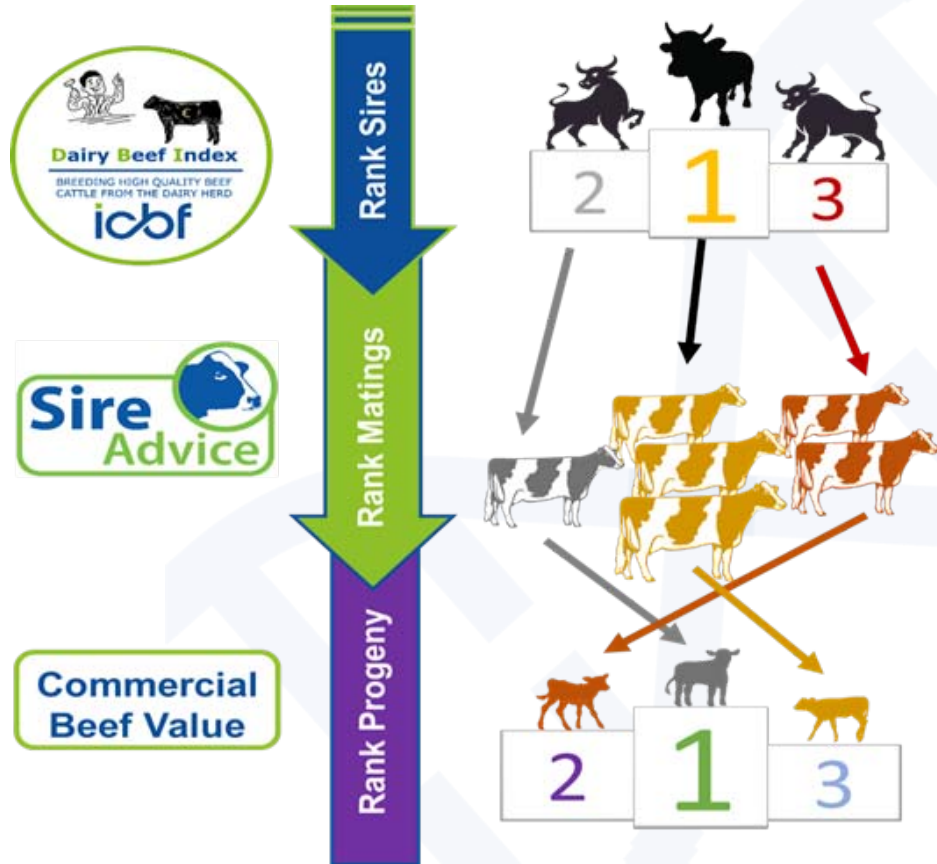
Dairy breeding index has included a beef component for almost 20 years



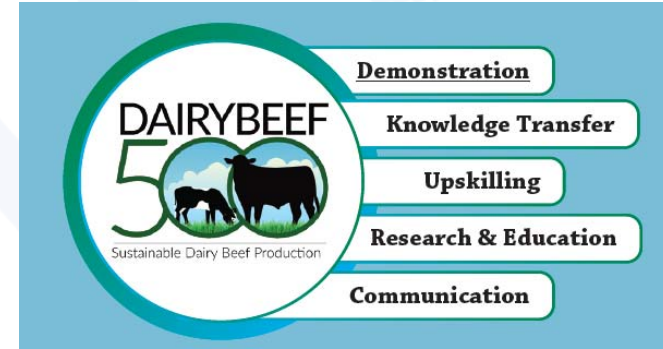


# The proposed solution

## A Trilogy of breeding tools



## Farm best practice



## Objectives

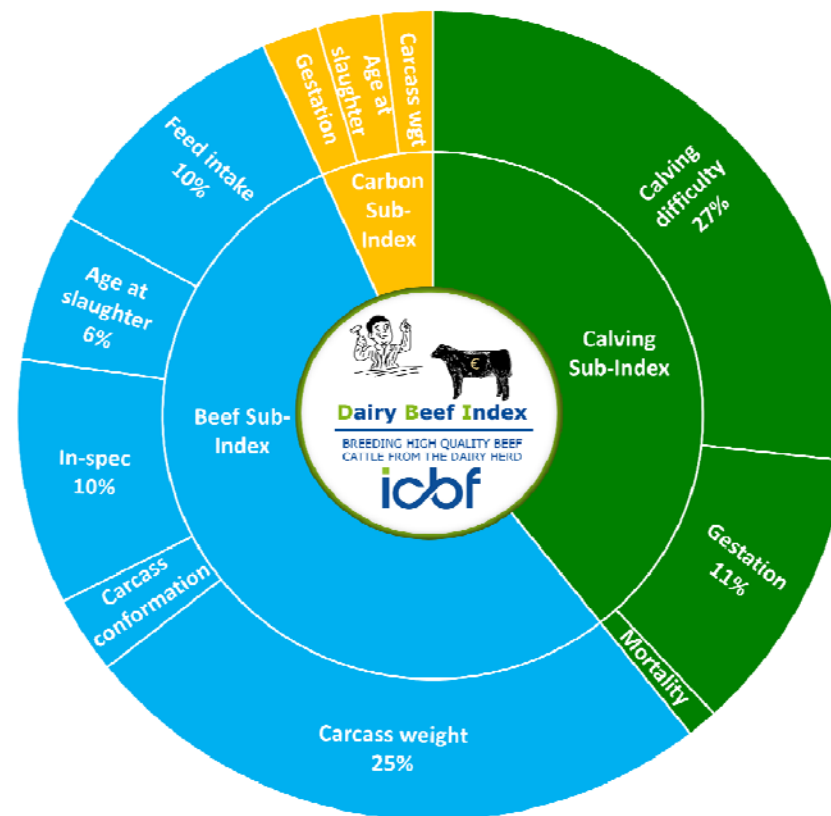
- €500/ha per hectare
- Beef and Dairy integration
- Improve beef merit of dairy-beef calves
- Promote best practices
  - Grass management, calf rearing, health
- Reduce environmental impact



# Dairy Beef Index (DBI)



- Identifies beef bulls suitable for the dairy herd
  - Calving traits
  - Carcass traits
  - Carbon traits
- Launched in 2019
- Updated in 2023 to include age at slaughter, TB, Carbon







# Mating advice

## 1. Farmer chooses sires and usage rates

- Farmer chooses females for dairy, beef, culling, crossbreeding....

Rank	Code	Name	Breed	EBF	DIB	Calv	Value
				€	Ref %	Value	€
1	UL480	DALPHIN	AU	147	89	52	95
2	LM011	EWINGVALE IVOR	LM	144	95	-6	149
3	DP2	DESFAIGNOU	AU	140	83	8	131
4	SA218	ULSAN	SA	137	87	46	91

## 2. Linear programming algorithm factors:

- Female predisposition to difficult calving + sire's calving difficulty genetic merit
- Hitting the carcass spec

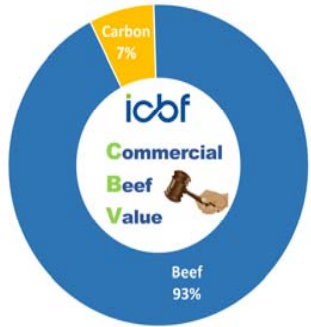


## 3. Farmer can save on database and send to technician handheld

## 4. 42% of cows were put through Sire Advice in 2024



# Commercial Beef Value and NGP



## Thursday 08:18 Session 1a: Decision Support Tools of the Future – Promoting Sustainability Farm Management

Margaret Kelleher: The Commercial Beef Value (CBV) encourages the adoption of sustainable and profitable practices in beef production.



## Thursday 16:45 Session 9: Genomic's impact on Livestock Sustainability

Mark Waters: Unlocking Genetic Potential: The National Genotyping Programme for Ireland's Cattle Herd

# Progeny testing programme



## Common herds

490 herds in dairy  
614 herds in beef  
290 herds in both  
25 straws: 5x5  
~ 22k straws



44 sires in  
2024 from 6  
breeds

## Common sires



377 sires  
tested in both  
programs

# Initiatives with Meat Processors

## Genotyping



- Breed surety
- Genetic merit



## Sensory attributes of meat

Trained panel MEQ EBVs

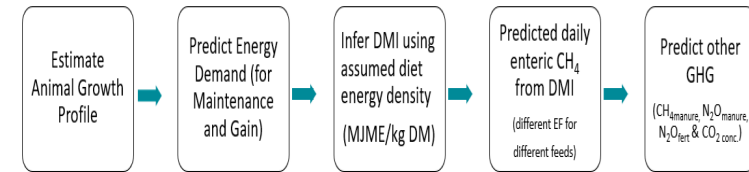


- Tenderness
- Juiciness
- Flavour



## Climate

Leverage the database  
Genetics, diet, systems



Carbon footprint / Carbon efficiency					
<b>Greenhouse Gas Output per animal</b> Expressed in kg of CO2 equivalent	106	3203	4446	3360	93% ★★★★★
<b>Greenhouse Gas Output per kg Carcass Weight</b> Expressed in kg of CO2 equivalent per kg Carcass Weight	106	10.23	13.17	11.11	98% ★★★★★
<b>Greenhouse Gas Output per kg Liveweight</b> Expressed in kg of CO2 equivalent per kg Liveweight	106	5.42	6.99	5.89	98% ★★★★★





# Other initiatives.....

## Methane PTAs



### ICBF test evaluations for Gross Methane genomic predicted transmitting abilities

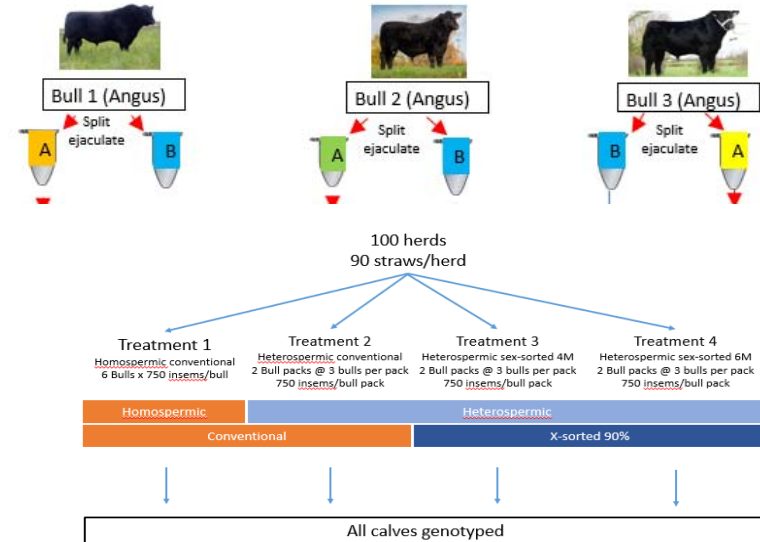
Methane PTAs are provided for All AI Bulls - Beef & Dairy  
 1,525 Tully cattle with methane phenotypes and 3,348 animals with feed intake phenotypes were used in this evaluation.  
 The most desirable PTAs are negative indicating the progeny will emit less methane. The trait is measured in grams per day.  
 The data has been collected at the Tully beef performance research centre.  
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Tg	Name	Methane value	Birth Year	Owner	Active	Methane value	Direction of PTA relative to average	Methane Reliability %	Mean Progeny in AI	Prog Herd	Prog Herd	Avg Age at Progeny	Avg Methane at Progeny
UM104	SABONA	LMF	2018	PROGRESSIVE AI BULLS	-	-27.87	Favourable	100	9	207	139	139	139
UM118	MELINDA JOHNSON	LMF	2018	DOVEA GENETICS	-	-24.7	Favourable	100	1	499	491	139	139
UM119	TECHNOLOGY INNOVATION	LMF	2013	NATIONAL CATTLE BREEDING CENTRE	-	-24.49	Favourable	100	11	179	499	179	179
UM187	TECHNOLOGY KEY	LMF	2014	SCORINGHOUSE AI BULLS	-	-24.08	Favourable	83	7	399	497	200	200
ZM1	CARLUSHEW GAZELLE	LMF	2011	NATIONAL CATTLE BREEDING CENTRE	-	-23.95	Favourable	87	2	287	471	136	136
UM171	MELINDA JOHNSON	LMF	2013	SCORINGHOUSE MATERNAL PROGRAM	-	-23.92	Favourable	100	3	394	491	139	139
UM187	SPYGLASS	LMF	2011	DOVEA GENETICS	-	-23.89	Favourable	83	9	218	475	139	139
UM198	TOPIC	LMF	2012	NATIONAL CATTLE BREEDING CENTRE	-	-23.88	Favourable	100	7	127	109	202	202
UM193	IF	LMF	2013	SCORINGHOUSE MATERNAL PROGRAM	-	-23.88	Favourable	87	3	294	499	139	139
UM184	MELINDA JOHNSON	LMF	2017	DOVEA GENETICS	-	-23.88	Favourable	87	1	189	165	202	202
UM198	SCOTTIE CREAKLE II	LMF	2013	NATIONAL CATTLE BREEDING CENTRE	-	-23.79	Favourable	100	1	147	499	139	139
PL117	ALBERT LEID	FM	2014	SCORINGHOUSE MATERNAL PROGRAM	-	-23.75	Favourable	17	6	211	499	139	139
UM184	SCORINGHOUSE LOCAL	LMF	2014	SCORINGHOUSE MATERNAL PROGRAM	-	-23.43	Favourable	86	10	343	491	139	139

- 2k greenfeed animals on TMR diet
- Expansion to grass diet phenotypes
- Cow phenotypes

## Improving male fertility

### 2024 Heterospermic semen field trial



# Summary

- Dairy herd has expanded by ~24% since 2015
- Beef from dairy now 60% of all beef processed
- Strategy focusing on both beef sire and dairy cow beef merit
- Breeding goals for beef herd and dairy herd now more aligned
- Meat processors now engaged and see benefit of genetic solutions
- Utilizing the cattle breeding database for more than just genetic gain





Thank You